

COAL MINING

"The Picture Book of the Industry"

OCTOBER 1949

VOLUME XXVI, No. 10



Coal Preparation Plant At
No. 1 Mine—Island Creek Coal Co.—Holden V. Va.

Cost Conscious?

If you're interested in getting
more work out of your equipment on
less low-cost fuel, with less upkeep,
over more profit-making hours . . .

Choose Cummins Diesels

P.S. Your Cummins Dealer
can show you proof!
Call him today!



CUMMINS ENGINE COMPANY, INC. - COLUMBUS, INDIANA

SEE YOUR CUMMINS DEALER

CUMMINS DIESEL ENGINES, INC.

209-13 N. 22nd St., Philadelphia 3, Pa., Tel. RI. 6-4460

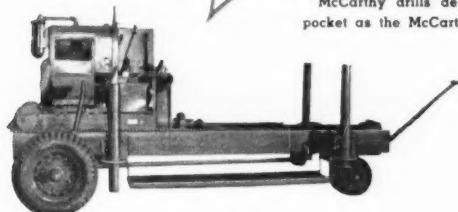
Branch: 2nd and Orange Sts., Mount Carmel, Pa., Tel. 1261

Branch: 6501 Hamilton Ave., Pittsburgh 6, Pa., Tel. Montrose 9784

Branch: Light and York Sts., Baltimore, Maryland, Tel. South 1281

McCarthy Drills PAY OFF!

SELF-PROPELLED HORIZONTAL DRILL



DOUBLE YOUR PRODUCTION

McCarthy drills deliver 40% more holes per day! More money goes into your pocket as the McCarthy drills save time and labor on the job.

Operating effectively in clay, sandrock and soft limestone overburdens, McCarthy Horizontal Drills bore 1200 to 1800 feet per day, working easily to depths of 150 feet or more.

Maneuverable from one job to the next, the machine is adjustable to the necessary drilling angle and is available in self-propelled, truck-mounted or vertical models. Every McCarthy Drill pays its own way in record-breaking performance.

HEAVY - RUGGED - POWERFUL

VERTICAL DRILL

The McCarthy Vertical Drill makes "dry" holes ready for tamping and it makes them fast. This drill bores 400 to 1000 feet per day.

Through shale, sandrock or soft limestone formations, McCarthy drills quickly penetrate to depths of 100 feet or more. Adaptable to high wall, key drilling and diamond drill boring. Write for the full story today.

Hydraulically controlled derrick and 60 horsepower gasoline motor are standard equipment. All McCarthy Drills can be equipped with electric motors.



INCREASE YOUR PROFITS

HEAVY - RUGGED - POWERFUL

COAL RECOVERY DRILL

McCarthy Coal Drills by-pass overburden, drill right into the heart of the seam. These drills produce from 60 to 110 tons of coal per day. In one mine where thick overburden made further stripping impractical, three men took a McCarthy Bonus Drill and pulled out 7 tons of clean, dirt-free coal in only 35 minutes!

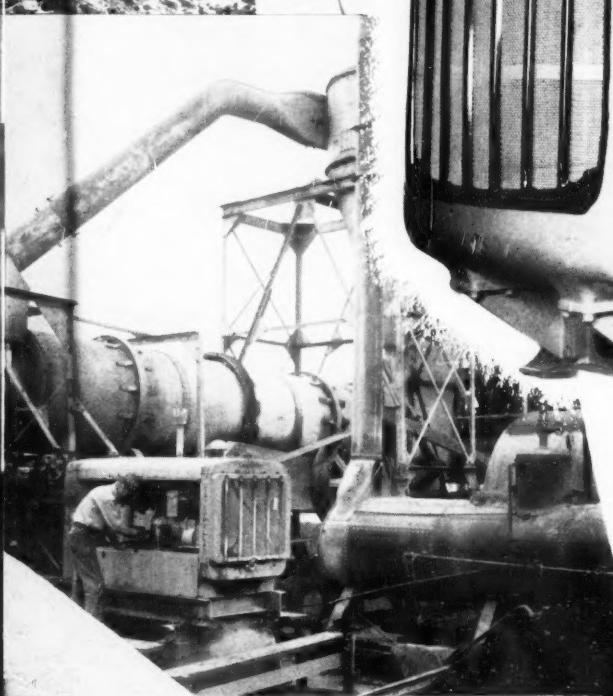
The rugged augers are made in 6 foot interlocking sections, are available in 12, 16, 20, 24, 30 and 36 inch diameters.



MANUFACTURED BY

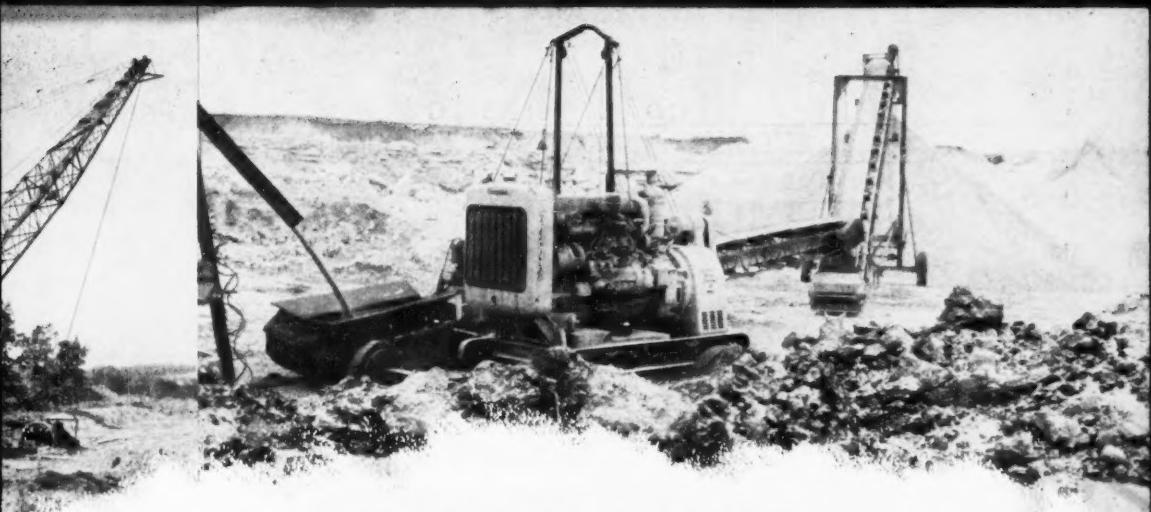
THE SALEM TOOL CO.

763 S. ELLSWORTH AVENUE
SALEM, OHIO, U. S. A.



"Caterpillar" Diesel Engines put profits
in your pockets because they are:

1. Dependable — operate when and where you need them — trouble-free operation
2. Economical — low-cost operation on low grade fuel — easily maintained
3. Tough — built to operate continuously under FULL load
4. Long-lived — year after year of dependable operation
5. Better-built — exclusive fuel filter system, aluminum bearings, electro-hardening of parts subject to wear, fuel injection pumps and valves individually replaceable, easily serviced
- b. Made by one quality famed manufacturer — backed by one dependable dealer service organization



BECKWITH OFFERS NEW POWER FOR OLD!

... with new life for your old equipment!



There's lots of profitable production left in your old equipment . . . production that may not be produced because of worn out, tired power. You can give new power, new profit-producing ability to your equipment by replacing that old engine with efficient, economical, long-lived "Caterpillar" power. There's a size of "Caterpillar" Diesel Engine to fit your every need — ranging from 39 continuous HP to 500 maximum HP. Let the expert power engineers at Beckwith Machinery Co. SELECT, INSTALL AND GUARANTEE the "Cat" Diesel Engine to replace your old power. It will mean profits in your pocket. Call us today.

BECKWITH MACHINERY COMPANY

6550 Hamilton Ave. - PITTSBURGH - Phone MOnrose 1-6900

— — — BRANCHES — — —
BRADFORD, PA. CLEARFIELD, PA.
361-369 Congress St. Old Town Road
Phone 3166 Phone 5-9635

— — — PARTS STORES — — —
BELMONT, OHIO FARRELLS, PA.
906 John St. E. Broadway
Phone BEthesda 4911 Phone Sharon 3572



"CATERPILLAR" DIESEL TRACTORS, EN-
GINEs, MOTOR GRADERS, EARTHMOVING
EQUIPMENT • HYSTER WINCHES AND
CRANES • JACKSON SHOVELS, PIPE LAY-
ELS • BUCYRUS-ERIE SPUDDERS AND SHOV-
ELS • CHICAGO PNEUMATIC COMPRESSORS
AND AIR TOOLS • ATHEY WAGONS, MOBI-
LERS, FORCE-FEED LOADERS • MOB-
IL PUMPS • MARTIN TRAILERS • MAR-
ERICK AND BASCOM WIRE ROPE • BROD-
INDUSTRIAL TRACTORS AND ENGINES •
JAHN HEAVY DUTY TRAILERS • McKEERNAN
TERRY PILE HAMMERS AND EXTRACTORS



MOORE-FLESHER HAULING CO.

HEAVY HAULING • RIGGING

MOVERS of Coal Stripping and Contractor's Equipment

TWO LOCATIONS:

Preble & Adams Sts., North Side, Pittsburgh 12, Pa. Phone: Allegheny 1-3600

AND

Stoney Hollow Boulevard, Steubenville, Ohio, P. O. Box 547

More Payload Per Pass!

How Much Payload Will It Move?

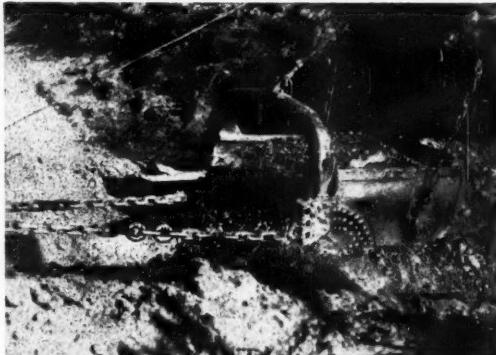
How Long Will It Last?

These are the yardsticks to use for judging a dragline bucket . . . and here's how ESCO dragline buckets measure up.

Operators frequently use larger ESCO buckets than would be possible with other makes.

Wearing parts are made of wear resisting ESCO manganese steel which polishes with use and become harder and tougher as they work. ESCO buckets LAST LONGER.

They have a clean cutting lip for positive bite, a balance for smooth carrying; control for exact spotting; hollow cast arch for great strength; streamlined for quick dumping; manganese steel for all wearing parts.



ESCO buckets are made in four types: Medium, Stripping, Standard and Heavy Duty in sizes from $\frac{5}{8}$ to 18 yards.

Made by: ELECTRIC STEEL FOUNDRY CO. . . . Portland 10, Oregon and 728 Porter St., Danville, Ill.

Sold by

KANAWHA STEEL & EQUIPMENT COMPANY

CHARLESTON 1, W. VA.

Telephone Charleston 33-6115

Dippers for Any Model and All Makes of Shovels • Manganese Drag Chains
Dump Blocks and Shackles • Hazard Wire Rope

COAL MINING

Vol. XXVI

OCTOBER, 1949

No. 10

Contents

	Page
Kanawha Valley Mining Institute	11
Central Pennsylvania Open Pit Mining Association Meets at Philipsburg	13
More Than 100 Attend NCA Regional Meeting	16
Future Einsteins and Curies May Win Advanced Training	17
Meeting of Bituminous Coal Operators Golf Associa- tion	21

Published Monthly By

MODERN MINING PUBLISHING COMPANYPublication Office, 5403 Clairton Boulevard,
Pittsburgh 27, Pa.Editorial Offices, 5403 Clairton Boulevard,
Pittsburgh 27, Pa.P. F. JASIK, Publisher and Editor
WILLIS S. DRAKE, Sales ManagerSubscription Price:—In the United States, \$1.25 per
year; all other countries, \$2.00. Single copy, 20 cents.All Forms 3578 To Be Sent to 5403 Clairton Blvd.,
Pittsburgh 27, Pa."Entered as second-class matter April 21, 1944, at
the Post Office at Pittsburgh, Pa., under the Act of
March 3, 1879."Coal Mining is indexed regularly by Engineering
Index, Inc.Our Creed: To promote mechanization in the Coal
Mining Industry; to advance living conditions of mine
employees.

Twenty-four Hour Service

SKF

Hyatt

Bantam

Torrington

Aetna

Auburn

Medart-Timken

Bunting Bronze

Browning V-Belt Drives

HUBBARD 1-4400

Bearing Division

HARRIS

PUMP AND SUPPLY COMPANY

Brady and Sidney Streets, Pittsburgh 3, Pennsylvania



New Departure

Bower

Orange

Shafer

B & R B

American

Kilian

Victor Seals

Lincoln Lubrication



Twenty years practical field experience. Specially engineered frictions. Dependable warehouse stocks . . . EFCO's combination for added hours of service on shovels, draglines, cranes, and tractors.

*Trade Mark
Reg. U. S. Pat. Off.

ENGINEERED FRICTION CO.

5939 Ellsworth Ave., Pittsburgh, Pa.
"Your phone brings our engineer" MOntrose 1-8713

FREEDOM
FINEST QUALITY
OILS AND GREASES
FOR ALL

COAL MINING
MACHINERY
VALVOLINE

FREEDOM-VALVOLINE OIL COMPANY
FREEDOM, PENNSYLVANIA

— BRANCH OFFICES —

PENNSYLVANIA

PITTSBURGH - JOHNSTOWN - GREENSBURG - BUTLER

WEST VIRGINIA

FAIRMONT - WHEELING

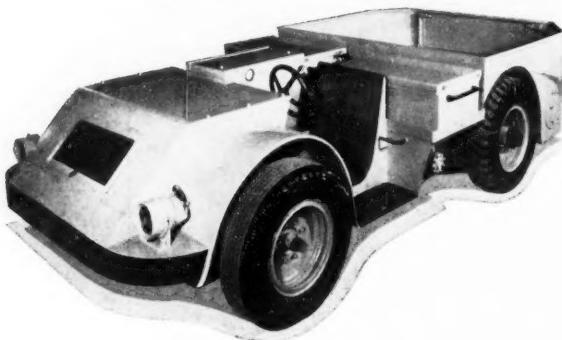
OHIO

SALEM - CANTON - STEUBENVILLE

NOW—THE RJI “MINE JEEP”

is fully equipped for 5 Complete Operations!

Here is the
all round service
unit for your
trackless mining
systems



TIMBER BOOM

Telescoping timber mounted on rear platform.
Operated by two air lifting cylinders
Self leveling timber head
Swing 55° to each side of center
Hand swing with automatic air brake stop
Hand operated telescoping and 36" extension



Please write for bulletin
and complete information.

1 UTILITY TRUCK

For handling supply and materials
needed for operating and maintenance
crew.

2 MINE TRACTOR

For pulling rubber tired trailers, with
timber and other supply, also to pull
miscellaneous equipment such as
rock dusters, air compressor units,
etc.

3 GREASE & SERVICE UNIT

Fully equipped with air operated oil
and grease guns for complete lubrication
of mining machinery at the
working face.

4 TIMBERING MACHINE

Equipped with air operated timbering
boom and power driven timber saw

5 POST PULLER

Four speed transmission gives power
and speed for pulling post.
Can also be equipped with electric
driven winch.

GENERAL DIMENSIONS

Overall height	36"
Overall width	76"
Overall length	14'-7"
Wheel base	80"
Timber boom-Max. height	8'-6"
Timber boom-Max. swing	55° each side of center

Lee-Norse Company
CHARLEROI, PA.

DO YOU KNOW . . . ?

It is a long step ahead from the German process of making gasoline from coal to the methods to be employed here in two new coal-to-oil government plants to be opened here on May 8, the anniversary of VE-Day.

Two processes are to be used in these U. S. Bureau of Mines' pilot plants, both improved from the methods that the Germans used during the war to produce aircraft fuels, motor vehicle gasoline and lubricating oils. One is based on direct hydrogenation or Bergius-Farben process, the other on the gas-synthesis or indirect Fischer-Tropsch method.

These processes are complementary rather than competitive, and the liquid products that each is best adapted to produce range all the way from heavy fuel oils for ships and industry to jet fuels and aviation gasoline.

The first of the two units, a hydrogenation demonstration plant, is now ready for operation. Production capacity is from 200 to 300 barrels a day. The plant is designed for pressure up to 10,300 pounds per square inch in two major operations.

These are the liquid-phase hydrogenation which accomplishes liquefaction of the coal, and vapor-phase hydrogenation which converts the liquefied coal to gasoline and byproducts. Chemically, crude petroleum contains more than twice as much hydrogen as does coal. Thus to convert coal to finished gasoline by this process, hydrogen is added under high pressure and temperature.

The second of the Bureau's new units, a gas synthesis demonstration plant, is scheduled for completion this year. This plant will gasify pulverized coal with oxygen and superheated steam. The resulting gases, a mixture of carbon monoxide and hydrogen, are converted to liquid fuels by the Fischer-Tropsch process.

Coal gasification is not only the first step in both basic processes but the number one cost problem at the present time. For this reason, priority was given to this phase of construction, and runs will be made in this unit while the synthesis unit is being completed.

* * *

Liquid stainless steel is made of microscopic flakes of the metal incorporated in a liquid plastic with a solvent to thin it so that it can be applied by brush or spray. It can be used on wood or metal surfaces exposed to fresh or salt water, and to air containing acids and alkalis.

* * *

Special registers and grills are used in this so-called Air-Wall system that direct the forced warm air upward in a fan-like pattern in front of the wall. A hidden feature is used of standard four-inch stove pipe, instead of the more expensive rectangular ducts usually installed to bring the hot air to the registers. This lessens the cost of ducts and installation as much as 50%, it is claimed.

Approximately 30% less air is circulated in the new system as compared with customary warm air systems. The air is supplied at somewhat higher temperatures for mixing with room air as it leaves the registers. Good circulation of air within the room is provided, and there is less tendency for the warm air to cling to the ceiling.

Here and There

In The

Coal Industry

A steam turbine of simple but quite unorthodox design, in which a ring-shaped body of water aids in developing full power, is the subject of newly-issued U.S. patent 2,467,990, taken out by C. B. Powledge of Conroe, Texas.

In the conventional turbine, steam is introduced between a central rotor covered with hundreds of cups or blades, and a set of similar "stator" blades attached to the stationary outer casing. In Mr. Powledge's invention it is the outer casing that rotates and delivers power. The centrally located, disk-shaped stator's only function is to distribute steam jets through vents around its periphery, against the relatively few cups carried by the rotating casing.

Water, introduced into the casing, is whirled into a ring-shaped body by centrifugal force immediately after the machine begins to move. The steam jets are delivered into this water, which aids in development of full power, the inventor states.

* * *

Noses and ears by mail order are the latest aid to patients who have lost an ear or nose through injury or disease.

The mail-order ears and noses are replacements for artificial ones that have deteriorated or lost their lifelike coloring. They are possible through a permanent mold method devised by Dr. Arthur H. Bulbulian of the Mayo Clinic. He has been constructing artificial noses and ears, medically known as prostheses, since 1936, and has made them for nearly 200 patients.

* * *

The Honorable Richard Maize, Secretary of Mines, Commonwealth of Pennsylvania, is back on the job after an operation and rest which seemed to have done him lots of good. Here he is discussing a pertinent matter at a recent meeting of the Pittsburgh Coal Mining Institute.

* * *

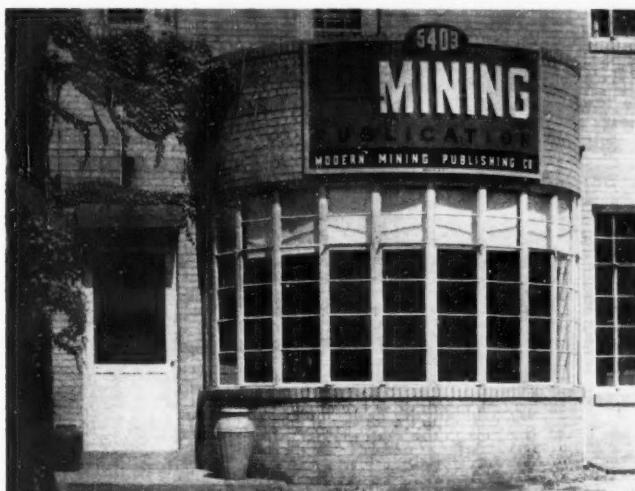
A team representing the Island Creek Coal Company names 24 and 26 Ragland won first place in the First Aid and Mine Rescue Meet of the Mingo County Mining Institute held at Williamson, W. Va. Second place went to the team representing the Red Jacket Coal Corporation, Red Jacket, W. Va., and third place was won by the Howard Coal Company team, Chatteroy, W. Va. In the colored division first place was won by the Laudo Corp. team of Laudo, W. Va.

* * *

John T. Wilson, President, Winco Block Coal Company, Bluefield, West Virginia, died recently at Bluefield.

* * *

R. H. Knobe, President of the Stonega Coke and Coal Company, Philadelphia, Pa., was elected President of the National Coal Association for the ensuing year. George H. Love, W. C. Shank, and Laurence Tierney, Jr. were elected Vice-Presidents. E. H. Davis, President of the New York Coal Co., Columbus, Ohio, was elected Treasurer. J. D. Battle was elected Executive Vice President.



New Office Quarters of COAL MINING, located at 5403 Clairton Boulevard, near the Allegheny County Airport, Pittsburgh 27, Pa.

JOY BELT CONVEYORS

YOUR BEST BET IN THE LONG HAUL!



Transfer point between JOY gathering and "mother" conveyors.

A modern JOY Belt Conveyor is the efficient main haulage in this mine.

- ★ **Designed for LOW MAINTENANCE**
- ★ **Built for LONG LIFE**
- ★ **Proved for RELIABILITY**

For gathering or main haulage systems, you'll find JOY Belt Conveyors most efficient in providing a smooth, continuous flow of coal at minimum cost, and with greatest dependability. Rugged construction and sealed-for-life idler bearings, requiring no lubrication, assure trouble-free operation with low power consumption and the least possible maintenance cost or shut-down time. • JOY builds a conveyor—belt, chain or shaker—for every mining condition. Write for Bulletins, or for engineering assistance.

W&D CL221



*Consult a
Joy Engineer*

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

Kanawha Valley Mining Institute

The Kanawha Valley Mining Institute held its 18th Annual Safety Meeting at Montgomery, W. Va., on Saturday, October 1. It was estimated that 12,000 persons attended this meeting and it could have been the largest Safety Gathering ever held in the state of W. Va.

The all-day meet started with a parade of nineteen floats depicting various phases of safety. In the procession were 8 high school bands, American Legion color guards, and members of the various teams competing in the first aid contests.

First place in the safety contest in the white division was won by a team representing the Carbon Fuel Company. Honors for second place in the white division resulted in a tie between teams representing the Electro-Metallurgical Company at Alloy and the Semet-Solvay Com-



Contestants in the Kanawha Valley Mining Institute's 18th Annual Safety Meet.



Left to right are officers of the Institute: Wm. Buchanan, treasurer; Lee M. Morris, secretary; C. L. Milligan, executive vice president; P. O. Hamer, second vice president; Major A. W. Fluegel, first vice president, and R. F. Overly, president.



Wives of coal miners in the white group of beauty contestants. Seated also are the judges of the contest.



Crowd awaiting the Safety Day parade in Montgomery.



Gauley Bridge High School Band.



Float of Montgomery Junior Woman's Club.



Float sponsored by the Montgomery Parent Teacher's Association.

pany team from Langaire. First place in the colored division was won by the Elkridge team of the Eastern Gas and Fuel Associates. Second place in the colored division was won by the Powellton team of the Eastern Gas and Fuel Associates.

Nation-wide toll dialing for long-distance telephone calls is promised for the relatively near future. With the addition of new toll dialing networks centering in New York and in Chicago, the Bell System is now handling approximately 10% of its long-distance calls by the new automatic switching method.

The Bell Systems program for nation-wide toll dialing is based on the development of a new electronic switching equipment which can select possible routes between distant cities, direct switching operations at intermediate points along a route, and complete connections automatically in a matter of seconds, the Record declares. When installations are completed, the average speed of all long-distance calls is expected to be about one minute, or about half the time now required.

MOST ELECTRICAL HAZARDS AND FAILURES IN COAL MINES CAN BE PREVENTED

In the following table are divided into 5 groups the results of leakage current measurements in 320 typical sections of power distribution circuits and mining equipment with trailing cables:

Equipment and circuits in Groups 1 and 2 were in satisfactory operating condition. Some minor defects were located in the 20 to 30 milliamper leakage range of Group 2.

In Group 3 the cause of leakage was located by careful visual inspection and corrected without difficulty.

In Group 4 the presence of fire and shock hazards was obvious. Total failure would have occurred if defects had not been located and



Contestants in the Negro beauty contest.

corrected at this stage.

Equipment and circuits in Group 5 were definitely dangerous. These were taken out of service until repaired.

Note: Routine inspection failed to locate defects in Group 2 and most of the defects in Group 3, but

after the existence of leakage was determined by test, some defects in Group 2, and all defects in Group 3 were located by careful inspection and a process of eliminating questionable conditions. After a little practice this process locates defects quickly.

Group	Leakage Current in Millampere	Measurements Number	Percent	Insulation Resistance in Megohm*
1	Less than 1	156	48.75	0.25 or higher
2	1 to 30	82	25.62	0.008 to 0.25
3	30 to 50	50	15.62	0.005 to 0.008
4	50 to 100	23	7.19	0.0025 to 0.005
5	over 100	9	2.81	less than 0.0025



H. S. Moore and W. G. Moore of W. G. Moore and Son, sponsors of the luncheon and afternoon entertainment.



Left to right: J. E. Kragle, Mining Engineer, C. W. Davis, General Manager, and H. B. Swope, Jr., President, both of the Middle Pennsylvania Coal Corporation.

Central Pennsylvania Open Pit Mining Association Meets At Philipsburg

The Central Pennsylvania Open Pit Mining Association held its Annual Field Day at the American Legion Country Home, near Philipsburg, Pennsylvania, on Thursday, September 15. A luncheon and other refreshments and entertainment by courtesy of the Moore's Industrial Supply Company at the Legion Country Home started about 1 p.m.

and lasted throughout the afternoon. Golf matches were played at the Philipsburg Country Club and started at 12:30 p.m. Dinner was served at 7 p.m. and was attended by a large group of coal strippers and their friends. Door prizes were distributed after the dinner and consisted of some very nice merchandise.



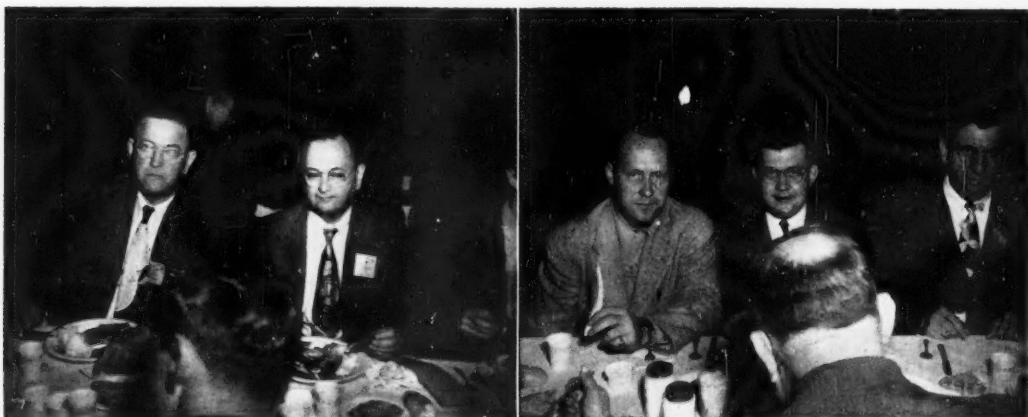
G. Albert Stewart addressing the gathering before dinner.



Left to right: B. W. Derringer, of the Central Pennsylvania Producers Assn., A. W. Gauger, United States Bureau of Mines, and the Honorable Richard Maize, Chief, Department of Mines, of Pennsylvania.



Left to right: B. M. Du Bois, Sr., B. M. Du Bois, Jr., and S. S. M. Du Bois of the Du Bois Coal Mining Company.



Above left—J. H. Wallins and G. Albert Stewart, Executive Secretary of the Association.

Above right—Charles R. Strader, George Maiklejohn, and Joe Radomski.

A group of the Highway Equipment Company salesmen, who attended the Philipsburg Field Day. On the extreme left are H. S. Moore, of the Moore's Industrial Supply Company and

Below left—Left to right: George Bowers, K. L. Hetrick, and C. E. Moore of Moore, Bowers, and Hetrick Company.

Below right—Left to right: J. B. Carey, District Freight Agent, Pennsylvania Railroad, Lewis Stein, Elliott Coal Mining Company, P. M. Roefer, Superintendent, Pennsylvania Railroad.





Left to right: M. A. Bymer, Frank B. Work, Sr., W. C. Hughes and L. W. Dickson, the latter two of the Wilkes Coal Company, Osceola, Pa.



Left to right: Lex Bailey, B & B Constr. Company, Dave Blount, Owner, Cavalier Coal Company, Altoona, Pennsylvania, and R. L. Aikin.

A group of attendants enjoying refreshments just before dinner.

H. D. Fleck, R. D. Jones, Putnam and Green, William Meyer, Meyer Brothers and J. C. Rice of Putnam and Green.



PATENTS

* * * *

A device intended to prevent automobiles from skidding is the subject of U. S. patent 2,463,634, just issued here to Ernest L. Martinis of Southgate, Ky. It consists of a pair of cylinders some eight or 10 inches in diameter, with short spikes to bite into the slippery road surface. These are mounted directly back of the rear wheels, but are kept swung up out of sight in the stream-lined rear portions of the rear fenders when not needed. When an emergency arises, quick pressure on a pedal swings them down until they bear on the road surface. At the same time, a pair of small rollers interposed between them and the wheels transmits power from the tires to the spiked rollers, causing them to turn in the same direction as the wheels. The spikes automatically claw for a firmer hold on the road, and the skid is brought to an end.

More Than 100 Attend NCA Regional Meeting In Denver, Colo.

Operators and others numbering more than 100 attended a regional meeting of the National Coal Association, held at Denver, Colorado, August 3, in which NCA Officers and staff members participated.

George H. Rupp, Manager, Mining Department, Colorado Fuel & Iron Corp., presiding in the morning, emphasized the vital importance of coal in the U. S. economy. He said that the Far West represented only about $6\frac{1}{2}\%$ of national production, but its reserves were estimated to be from 73 to 80%. He added that he felt that in the long-term future the Far West would be the basis of the country's industrial power because of its coal reserves. Mr. Rupp noted that everyone had heard a great deal about the UMW, but not so much about NCA. He said the National is doing things of tremendous importance; that its activities are of great interest to Far Western operators. He pointed out a special interest in the powdered coal turbine and progress in synthetic fuels, adding, "Out here we certainly can't get alarmed about the future of the coal industry."

Charles A. Owen, NCA President, speaking on "Cooperative Effort at the National Level," reported that the Far Western members of NCA were drawn from 10 states; that these were "firm in their support of the Association." After reviewing the various NCA departments and affiliates, he discussed the new Natural Resources Committee, stating it had been formed to study and analyze competitive fuel markets; that at present in the East oil could "just go in and take markets from us" because they sell fuel "so far below us that coal can't compete."



Mr. Owen then noted that the monopolistic labor situation had "reached a point where it would have to change." He said NCA needed complete support of the industry in its effort to remove labor from anti-trust exemption.

John D. Battle, NCA Executive Vice President, gave a "Review of Activities and Discussion of the Future Program of the Association," calling for "faith in those who establish the policies of the Association, and faith in those who carry out the policies." He reviewed the Bluefield and White Sulphur Springs conferences, bringing his audience up to date on what had occurred at those wage negotiations.



Afternoon shift of miners ready to enter Vesta No. 5 Mine of the Jones and Laughlin Steel Corporation at Vestaburg, Pa.

"Joy Core Drill Supplies and Equipment" is the title of a new catalog on auxiliary core drilling equipment recently issued by Joy Manufacturing Company, Henry W. Oliver Bldg., Pittsburgh 22, Pa. For use by all owners or operators of core or diamond drills, this 36-page catalog, Bulletin D-18, contains illustrations and specifications for a complete line of core barrels, bits, drill rods and other equipment necessary for diamond core drilling operations. When requesting bulletin please state type core drill on which equipment will be used.

Future Einsteins and Curies May Win Advanced Training

By MARGARET E. PATTERSON
Secretary, Science Clubs of America

A boy or girl in the senior class of the high school near you may be a future Einstein or Curie.

Those neighborhood kids you have watched grow up with their model airplanes, experimental animals, homemade telescopes, whining electronic gadgets and chemical conglomerations may be the ones who will be changing our world of the future.

A great search for youngsters with inventive flare and creative genius in science is now on.

Finding Scientists

You can help find these scientists of tomorrow by telling the talented boys and girls you know that scholarships for further training in science are waiting for them.

Like hundreds of others before them they may be nationally recognized and speeded along to scientific productivity by winning in the Science Talent Search for the Westinghouse Science Scholarships, conducted annually by Science Clubs of America, administered by Science Service.

A total of 320 young scientists have been discovered through this search since 1942. These winners, along with 2,080 named as honorable mentions, are now enthusiastically pushing back science frontiers.

Youthful Scientists

Do high school seniors seem too young to be taken seriously as scientists? During the eight years of the Science Talent Search the records, made by the young scientists named for honors, have convinced scientists and the public in general that a high school senior with a talent for science is a rare and very valuable individual.

As a sample of their accomplishments let's look at the records of eight typical winners, only a few months or a few years removed from their high school graduation.

H. S. GRADUATE 1949—During three summer vacations a high school boy roamed on foot and by boat studying and collecting mollusks (clams, snails, etc.) on a tiny island off the Atlantic coast. When he wrote the results of his diligent explorations he had raised the number of known species on the island from 46 to 120. His careful analysis of the mollusks that once lived on that island and those that do now is so highly respected by authorities in the field that the work is being pub-

lished by a large eastern university. The 17-year-old boy, Dwight Taylor, is now a freshman at the University of Michigan, continuing his study of paleontology.

H. S. GRADUATE 1948—Making organic chemicals combine may be dangerous because of the constant threat that the reagents used can explode. A high school boy, whose

hobby has been chemistry since he came to the U.S.A. from Hungary as a child, was intrigued by this problem. In 1948 he announced success in his quest for chemicals to replace the dangerous ones in a paper so important it was reported in full in two national magazines for professional chemists. The 17-year-old, Andrew Kende, is now a sopho-



Steven Williams (center, holding hat), chief of the Ohio Department of Mines, and new president of the Mine Inspectors Institute, examines a new MSA Faceduster, recently developed by Mine Safety Appliances Company for rock dusting mine faces. With Mr. Williams is a group of mine inspectors. They were among 400 who participated in a tour through the MSA plant during the recent convention in Pittsburgh of the Mine Inspectors Institute. Explaining the new Faceduster is George Alston, MSA representative (left).



Model 22 Wayne Mobile Shovel loading coal at the Aughenbaugh Coal Company near Clearfield, Pa.



George Yoxtheimer stands by the four-place Ryan Navion which helps him to carry on his efficient bituminous strip mining operations at Punxsutawney, Pa. Extra passengers and loads of heavy machinery repair parts go with him on most of his flights.



Loading out a nine foot seam of coal in an Illinois strip mine.

more at the University of Chicago, majoring in organic chemistry.

H. S. GRADUATE 1947—At an age when most girls are still playing with dolls, one was learning about microscopic plants and animals. By the time she was a high school senior her knowledge of *Drosophila melanogaster* (fruit flies to you) was so advanced she was the working partner of a college professor of genetics. Today ability like hers with micro-techniques assures you safety if you are prescribed either of two still rare, new antibiotics. All this past summer she has painstakingly standardized the reactions of bacteria to chloromycetin and neomycin at the Cold Spring Harbor station of the Carnegie Institution of Washington. She is Rada Demerec, 19-year-old junior at Swarthmore College, majoring in biology and considering medicine as a career.

H. S. GRADUATE 1946—Nuclear physics has interested one young man as long as he has known about science. By the time he was a high school senior, he had built his own cosmic ray counting apparatus and could compare its results favorably with that of equipment available commercially for many times the price.

When he entered the University of California at Berkeley he began to help in the Radiation Laboratory on assignments far beyond those usually given to a college freshman. Now a senior there, he holds the position of senior lab technician in the same laboratory where he has worked off hours and summers for his whole college career.

The work David Cudaback does for an Atomic Energy Commission project is on the classified list so we can only guess at the seriousness of it.

H. S. GRADUATE 1945—On July 1, 1949, the USS Norton Sound left the West Coast bound for six weeks in the Pacific. On board, a party of scientists, jointly sponsored by Princeton University and the Office of Naval Research, was seeking information about cosmic rays in order to shed further light on nuclear burst process. Among them was Kirby Dwight, Jr., 21-year-old graduate physicist from Princeton, getting his first taste of in-the-field of atomic research, and helping to find one more key to the riddle of atomic power.

H. S. GRADUATE 1944—Graduating from high school at 14 is looked upon with some wonder but when a boy does that and also wins one of the big scholarships in a na-

tional competition for young scientists the wonder grows.

An Alabama boy in 1944 had done such advance work with thioplastic that even the judges of the Science Talent Search were amazed. He went on at his rapid stride to graduate at 17 from Massachusetts Institute of Technology and to accept a job with duPont.

By going to school at night, he earned a master's degree at 18 from the University of Delaware. Then getting a leave of absence from his job he enrolled at Caltech. In August, 1949, at 20 he is Dr. Rodman Jenkins, Ph. D. in chemical engineering, to prove that promise at 14 can be a reality at 20.

H. S. GRADUATE 1943—Mathematics is basic to all sciences and often is so basic to new discoveries that it must be kept secret. This is true of projects like one being done for the Office Naval Research at Cornell University. Working on it is Dr. Murray Rosenblatt, 23-year-old Ph. D. in mathematics from Cornell.

H. S. GRADUATE 1942—At the Lewis Flight Propulsion Laboratory of the National Advisory Committee for Aeronautics in Cleveland, Ohio, fuels adequate for jet planes must be perfected. Selecting, synthesizing and testing new and better hydrocarbons is the job of men like Dr. Wolf Karo, 25-year-old Ph.D. from Cornell University. Since his arrival from Germany, shortly before World War II, he has never deviated from his goal of becoming an organic chemist.

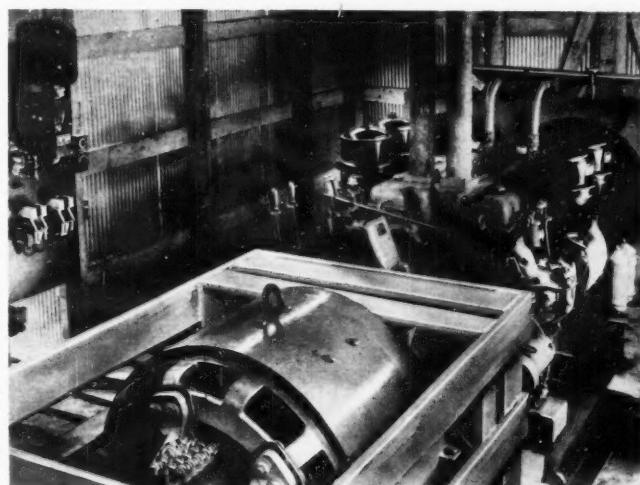
New Search Begins

The Ninth Annual Science Talent Search, now on, will locate other young scientists like these spotted during the past eight years.

The 16,000 boys and girls expected to enter the competition this year have been busy with practical experience in science during their vacations and are now back at their high school studies. Seniors in public, private and parochial schools will report on the results of their investigations and experiments in a 1,000-word essay on "My Scientific Project," one of the requirements of the Science Talent Search which ends Dec. 27, 1949.



Shown as it is being delivered to the Homestead Mine, Earlington, Ky., this new Dart coal hauler is powered with a 275 hp Model NHBS-600 Cummins Diesel and is equipped with a 15-ton capacity bottom dump trailer. A total of 14 Cummins-Powered hauling units is now in operation at this coal stripping mine.



At Widnoon Mine, Kittanning, Pa., this 200 kw a.c. generator set was assembled and installed by Highway Equipment Co., Pittsburgh. It is driven by a Series 71 Twin 6 GM Diesel.

SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

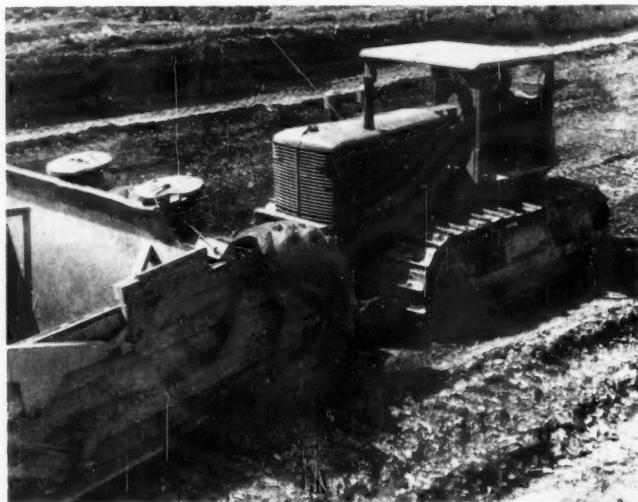
Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills



Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers.

THE SALEM TOOL COMPANY

SALEM, OHIO, U.S.A.



A model HD-19 Allis-Chalmers tractor pushing a LeTourneau scraper at the strip operation of Moore, Bowers & Hetrick of Coalport, Pa.



All concrete underpass at a large strip mine in Western Pennsylvania.



Filling mine locomotive sand box from overhead sand dryer at the Ebensburg Coal Company, Colver, Pa.

The 40 chosen as winners will be announced early in 1950 and will be invited to the five-day all-expenses paid Science Talent Institute in Washington, D. C., in March. Here one boy or girl will be selected to receive a Westinghouse Grand Science Scholarship of \$2,800; one of \$2,000 will go to the runner-up. Other trip winners will receive scholarships ranging from \$100 to \$400, all made available through the Westinghouse Educational Foundation.

In 15 states where State Science Talent Searches have been set up to run concurrently with the national competition, the fortunate entrants will have a double chance of placing in the national or state contest and are thus assured of additional opportunity for college educations.

Successful Experiment

The Search was started as an experiment by Science Service and the Westinghouse Electric Corporation to provide an adequate supply of promising young scientists for the continuing development of American science.

The experiment has indicated clearly that talented young scientists can be located by the time they are high school seniors. Scholarships and recommendations have made it possible for hundreds of boys and girls who might not otherwise have had the incentive or financial assistance, to continue their education in science and to develop further their rare gifts of science talent.

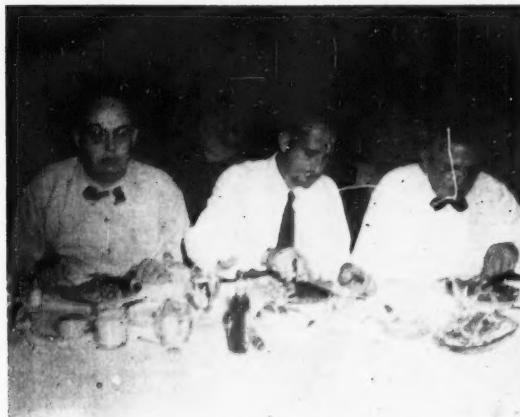
With this country thrust more and more into a position of world leadership in science this successful experiment is of even greater value to the strength and security of the United States than when it was originally planned.

Young Scientists Everywhere

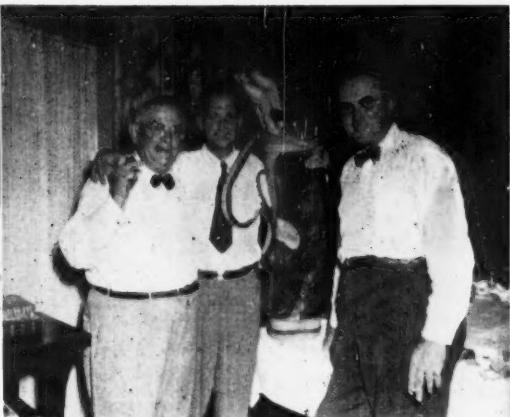
Size of school and its geographical location seem to have very little to do with winning in the Science Talent Search. Promising young scientists appear to be almost everywhere in the U. S.

Winners receive handsome bronze plaques to present to their schools. Forty proud high school seniors will be giving them to their school next spring at commencement time. Perhaps that high school near you will be getting one for the first time or adding a new one to its collection. They will signify 40 more boys and girls launched on a career of service through science.

Complete details of the Ninth Annual Science Talent Search may be obtained by writing to Science Clubs of America, 1719 N St., N.W., Washington 6, D. C.



Left to right: W. G. Stevenson, General Manager, Hillman Coal & Coke Co.; Jim Hamilton, Vice President, Island Creek Coal Company, Holden, W. Va.; Frank Dunbar, retired.



Frank Dunbar and Dick Johnson of Mine Safety Appliances Company present Jim Hamilton with a set of golf clubs. Presented to Jim Hamilton.

Meeting Of The Bituminous Coal Operators Golf Association August 11, 1949

The Uniontown Country Club meeting of the Bituminous Coal Operator's Golf Association of Western Pennsylvania, held on Thursday, August 11, gave Jim Hamilton a very friendly and rousing send off to his new position as Vice President

in Charge of Operations for the Island Creek Coal Company. Jim Hamilton will make his home at Holden, West Virginia.

The day was pleasant and an unusually large number of players turned out for golf. Color motion

pictures were taken of the golfers in action on the first tee-off, on the putting greens, and on the fairways. Color motion pictures taken at the previous party at the Nemacolin Country Club were shown at this . (Continued on page 24)



John S. Schroeder, A. Reed Schroeder, and W. E. Schroeder of the Schroeder Brothers, Pittsburgh.



Joseph W. Oliver, Assistant Vice President, Pittsburgh Consolidated Coal Company; Mark Simpson, Sales Representative, Templeton, Kenly & Company, and George Wyant, Superintendent, Indiana Mine Republic Steel Corporation.



K. W. Bartlett, Superintendent, Carolina 43 Mine, Bethlehem Collieries; G. J. French, Representative, Farmers Engineering, and W. P. Place, Sales Engineer, Farmers Engineering.



Bill Schiffbauer, Foreman, Buckeye Coal Company; Chief Arentzen, President, Lee-Norse Company; Art Shannon, Fairmont office, Jeffrey Mfg. Company.



J. Z. Linsenmeyer, Manager, Mining, Petroleum & Chemical Section, Westinghouse Electric Corporation; C. N. Repligole, Flood City Brass & Electric Company; D. E. Renshaw, Engineer, Mine Locomotive Division, Westinghouse Electric Corporation.



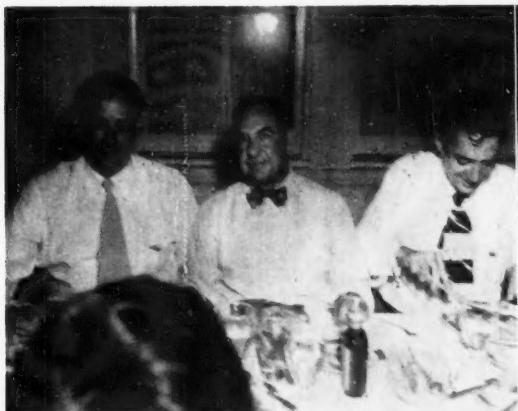
W. C. Wilson and Robert E. Edgar of the Watt Car and Wheel Company and Fred O. Fowler of Thomas Brown, Inc.



Left to right: A. G. Suebert, West Penn Power Company, and H. J. Lang, Industrial Electric Company, Washington, Pa.



J. C. Durfee, Superintendent, Robena Cleaning Plant; F. W. Branch, Whitney Chain and Manufacturing Company, and A. J. Stephenson, Fairmont Machinery Company.



Leo J. Schulte, Mosebach Electric & Supply Company, H. H. Madera, Carpentertown Coal Coke Company and L. F. Marshall, Mosebach Electric & Supply Company.



C. W. Thompson, Assistant Manager, Weirton Steel Company and John Spuregon, Attorney, Uniontown, Pa.



Left to right: Charles M. Mordesovich, Crucible Fuel Company; H. L. Dunbar, President, Superior Supply Company, Pittsburgh, and Scotty Grove, Crucible Fuel Company.



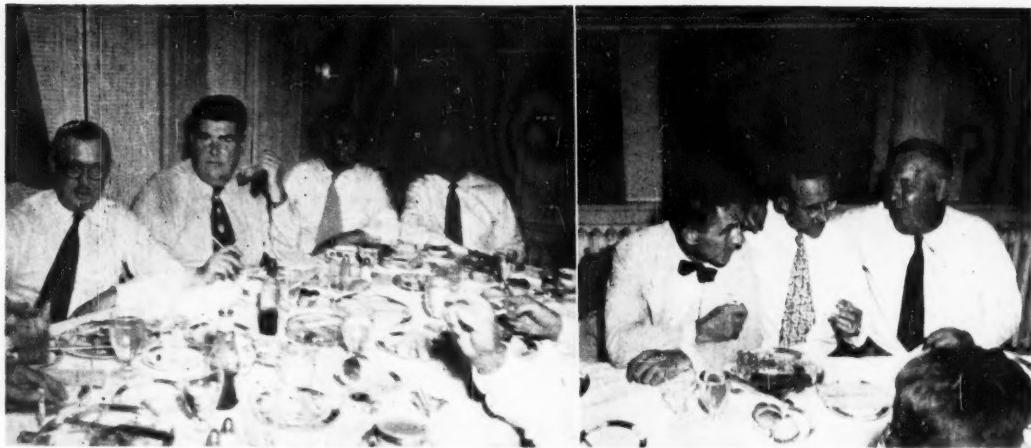
Max Lambert, Hewitt Rubber Company, Pittsburgh, and on the extreme right, G. G. Kingsley, General Electric Company.



G. W. Kepier, Jr., Assistant Purchasing Agent, Pittsburgh Coal Company; S. E. Kane, Mosebach Electric and Supply Company, and Ed Vant, Jeffrey Manufacturing Company.



Left to right: Art Goodwin, Assistant Master Mechanic, Robena Mine; H. Clyde Sechler, Master Mechanic, Robena Mine and A. L. Brautegam, Owner, Victoria Coal Co.



Joe Hedding, General Superintendent, Republic Steel Corporation; A Doctor from Uniontown; J. H. Sanford and R. C. Goss of the Ohio Brass Co.

Marshall J. Jones, Jones Coke & Briquette Company, and Mr. Maize, Safety Director, National Coal Association.

COAL OPERATORS GOLF ASSOCIATION

(Continued from Page 21)
meeting and were enjoyed by the bad golfers as well as by the better ones.

At dinner, after golf, the attendance was large and the guests were happy and charitable as they contributed enough money to buy a complete set of golf irons and woods, a golf bag, and a set of four mittens for the woods as a present to Jim Hamilton, who was Secretary of the Uniontown branch of the Association since it started.



Coal-dust suspended in water, known to the trade as slurry coal, has long been a troublesome waste in the coal-washing industry. Andrew F. Howe of St. Louis has worked out a method for its salvage, involving first screening it to remove too-coarse particles, then wringing it dry in a centrifuge, and finally spreading it on a conveyor that carries it through a special oven or "devolatilizer" where gases are driven off and used as fuel. The coked powder is then pressed into briquets for home or industrial use. Patent 2,474,251 has been issued on this invention.



Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of August 24, 1912, As Amended by the Acts of March 3, 1933, and July 2, 1946

OF COAL MINING published monthly at Pittsburgh, Pa. for October 1, 1949.

State of Pennsylvania ss.
County of Allegheny

Before me, a Notary Public in and for the State and county aforesaid personally appeared Peter F. Jasik, who having been sworn according to law deposes and says that he is the owner of COAL MINING and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of

March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Peter F. Jasik; Editor, Peter F. Jasik; Managing editor, Peter F. Jasik; Business manager, Peter F. Jasik, Pittsburgh, Pa.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated company, its name and address, as well as those of each individual member must be given.) Peter F. Jasik, Pittsburgh, Pa.

3. That the known bondholders, mortgagees,

and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also,

in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, if any, not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is . (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

PETER F. JASIK

Sworn to and subscribed before me this 5th Public. (My commission expires January 7, day of October, 1949. Horace E. Ewing, Notary 1951.



Carmichael's Mining Class. Left to right: J. S. Ellenberger, President of School Board; Steve Rodavitch, Joe King, Alex Kott, Steve Yuras, Andy Szak, Ben Lipniski, William Groves, Instructor.

The new M.S.A. Gas-Fume Respirator for protection against mists, dusts, fumes, organic vapors and acid gases which occur in burning, spraying, pouring, welding, cutting and other industrial operations is fully described in an illustrated bulletin now available from Mine Safety Appliances Company.

Designed to combine protection with working comfort, the M.S.A. Gas-Fume Respirator employs twin replaceable filters which are mounted on the wearer's back. Back-mounting removes the filters from areas of heavy contaminant concentrations, and also permits unobstructed vision and complete working freedom. Other comfort and safety features are the "Comfo" sure-seal facepiece, guarded exhalation valve, and inhalation check valve. The entire unit weighs only 2 lbs. 14 oz. and is equipped with comfortable all-rubber headbands and neckbands for well-balanced fit.

For a complete description of the features and uses of this multi-purpose respirator, write for M.S.A. Bulletin No. CR-23 to this publication, direct to Mine Safety Appliances Company, Braddock, Thomas and Meade Streets, Pittsburgh 8, Pennsylvania.

The Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa., announces the development of an improved, permissible, battery-type 5-SC Shuttle Car. This model is said to combine the flexibility and safety of the battery-type car with the constant power of the cable-reel shuttle car.



The 5-SC-6PD, as the car is designated, features a built-in connector which permits the operator to plug into a booster circuit at the unloading station. The power from the booster circuit is used to unload the shuttle car, while recharging the batteries at the same time. By this method, the drain on the batteries is reduced so much that hydraulic steering and hydraulically-adjustable elevating discharge are permitted. Furthermore, the batteries are claimed to produce the required power at the end of the shift as well as at the



For building a road adjacent to the coal tipple on their stripping project near Houtzdale, Pa., W. G. Moore & Son used this HD-5B Allis-Chalmers tractor. Highway Equipment Co., Pittsburgh, furnished this tractor and installed its Gar Wood Hydraulic Angleblade.



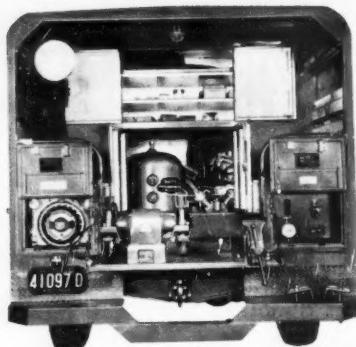
Type 12001 Lima High Lift Stripping Shovel in operation at mine of W. O. Gulbranson Inc., Houtzdale, Pa.

beginning.

Specifications of the 5-SC-6PD are as follows: height, 42"; length, 23' 0"; width, 87"; capacity without sideboards, 145 cu. ft.; ground clearance, 7½".

"Scientific Coal Preparation Methods and Equipment" is the title of

a 28-page Book No. 2355 published by Link-Belt Company, 300 W. Pershing Road, Chicago 9, containing installation views, flow sheet diagrams and other ideas for the low-cost handling and better preparation of coal at the mine. A copy of this new book will be forwarded to any interested reader upon request.



Davey Compressor, mounted on 4-wheel drive truck, especially designed for servicing equipment on a strip mine job, has space for driver and six passengers. It carries 300 amp. welder and 8 kw. a.c. generator driven by truck engine through a Davey power take-off; a high-pressure lubrication system powered by a Davey compressor; an oxyacetylene welding, cutting and brazing unit; 8-in electric powered bench grinder portable arbor press, flood lights; 7500 lb. winch and other tools. Ask for Bulletin E-232. Davey Compressor Company, Kent, Ohio.



40 Ton Bottom-Dump Euclid Diesel driven truck hauling coal at the United Electric Coal Co., Duquoin, Illinois. The haul is two miles long.

Vibrating Screens Conveyors—Feeders Scales—Crushers Conveyor Idlers

Guaranteed Equipment Immediate Shipment

TRUCK SCALES

15 Ton Truck Scales	\$450.00
20 Ton Truck Scales	510.00
26 Ton Truck Scales	565.00
Other scales to 50 ton capacity. All truck scales complete with structural steel weighbridge. Replacement parts for most all makes of scales.	

MINE TIPPLE SCALES

5 Ton Tipple Scales	\$312.00
15 Ton Tipple Scales	400.00
20 Ton Tipple Scales	465.00

CRUSHERS

Stoker Coal Crusher	\$395.00
Coal Crushers, 60 to 200 tons per hour capacity	785.00
Coal Crushers, 90 to 375 tons per hour capacity	1785.00
Coal Crushers, 120 to 500 tons per hour capacity	2285.00

FEEDERS

15 to 35 ton capacity	\$150.00
28 to 60 ton capacity	190.00
50 to 100 ton capacity	575.00
100 to 175 ton capacity	800.00

VIBRATING SCREENS

Approximately 100 machines in stock, ranging in screen sizes from 2'x5' to 5'x14' and with 1 to 5 decks. Eccentric weight or positive throw eccentric shaft types. Prices from \$395.00

CONVEYOR—PICKING TABLES

Troughing idler conveyors—picking tables. Lengths from 10' to 50', widths to 60". Prices from \$395.00

TROUGHING AND PICKING TABLE IDLERS

All steel. Interchangeable with other well known makes of idlers. Precision ball bearings with alemite fittings. Replaceable bearings. Shafts run clear through and bearing lock nuts are required. Easy to start and will run in cold weather. Rust-proof ball races; maintenance is negligible. Build your own conveyors. We have all parts, including standard sections, head and tail pulleys, take-ups, drives, idlers, speed reducers, sheaves, belting, etc.

3-roll Troughing Idlers:	
14" belt width	\$18.50
16" belt	19.00
18" belt	20.00
24" belt width	24" belt \$21.00
	30" belt 22.00
	36" belt 23.00
	42" belt 24.00

1-roll Return Idlers:	
24" belt width	8.25 36" belt \$ 9.75
30" belt	9.00 42" belt 10.50
	48" belt 11.25

More than 2000 mines have Bonded equipment. Send for catalog and prices.

BONDED SCALE & MACHINE CO.

2188 S. Third St. Columbus 7, Ohio
Phone Garfield 2186
University 2832, Eves.

Vapor-phase (high temperature) cooling is going to bring about a revolution in the internal combustion engine industry. In vapor-phase cooling water or any other liquid coolant is allowed to heat up to 212 degrees and circulate to a steam separation chamber where steam is removed and water is pumped back into the cooling system. The steam is passed through a radiator or condenser and resulting water is returned to the cooling system. An experimental Chevrolet automobile using vapor-phase cooling has been driven 165,000 miles and its engine is as good as if it ran only 30,000 miles.



Typical of how contractors have turned to coal stripping in recent years is the case of the Corte Construction Company, of Kimball, W. Va., made up of three brothers, Stelio, Ennio and Mirtlo, all ex-soldiers. One of three International TD-18 diesel crawler tractors with cable dozer the Corte brothers operate is shown at work on a big stripping job high up on the side of a mountain near Matoaka, W. Va. Like a big U, this strip stretches along the side of the mountain with the overburden being dumped into the valley. According to the Rish Equipment Company, which has furnished most of the equipment on this job, the overburden averages 50 feet in thickness. Coal comes from a seam four to five feet thick and is the high grade Pocahontas No. 3 coal. Some 325 tons are mined each day and trucked a mile away to a cleaning plant at Matoaka.



The famed Trail of the Lonesome Pine Country in southwest Virginia's rugged mountains is the locale of this coal stripping operation conducted by Turner Brothers, two miles from Wise, Va. Not far away is Big Stone Gap, home of John W. Fox, novelist, who is celebrated for his mountain novels, especially the Trail of the Lonesome Pine. Marvin J. Turner is shown removing overburden from the rich coal seam with an International TD-18 diesel crawler tractor and Heil bulldozer. According to Rish Equipment Company, International distributor in that area, some 15 railroad cars of coal from the Blair seam, three feet thick, are mined daily. Coal is first crushed before going to the tipple. Turner Brothers headquarter at Roanoke, Va., and are primarily dirt and road contractors.



Deep in the Mountains of Wyoming County, W. Va., the Pocahontas Fuel Company is putting in what will be the second largest coal preparation plant in the state. Here two International TD-17 diesel crawler tractors, sold in the two Virginias by the Rish Equipment Company, with 12-foot bulldozers, are shown gouging out a roadbed for the new operation, located near Itmann. Lilly Construction Company, of Bluefield, W. Va., has the contract for that particular job. Two miles of tram road will lead down from the mine opening to the coal preparation plant and slate dump.



The Carbon Fuel Company maintains a big coal stockpile at Marmet on the Kanawha River in West Virginia, the coal coming from its own mine at Carbon, W. Va. Belt conveyors are used to load barges from the stockpile and here an International TD-14 tractor with bulldozer is busily engaged in pushing coal into big hoppers from which it is raised by loaders to conveyor belts.



• A LARGE STOCK •

BARE COMPRESSORS

TANK MOUNTED UNITS

A COMPLETE
REPAIR SERVICE

PARTS & ACCESSORIES
CARRIED IN STOCK



ESTABLISHED 1836

TRANTER MFG. CO.
105 WATER ST. COURT 0600

INCREASE YOUR PRODUCTION

with

DALY'S IMPROVED COMBINATION MINE CHECK
The Only Satisfactory Check on the Market Today

DALY TICKET CO., Collinsville, Ill.

VICTAULIC

The flexible coupling for all types of pipe.

Distributors

S. E. GANE & CO. 508 Grant St., Pittsburgh, Pa.

REBUILT EQUIPMENT - - - READY TO SHIP

SPECIAL BARGAIN

3—Type A3G Goodman Duck bills.

COAL DRILLS

2—Jeffrey—250 v. DC.

COMPRESSORS—SPECIAL BARGAIN

7—240 cfm Westinghouse 3 cyl. vert. 150 lb. pres. dir. con to 50 HP AC Slip ring or DC Motors.

MOTOR GENERATOR SETS—250 v. D.C.

Motors 220/440 v. or 2200 v.—3 ph., 60 cy.

No. KW Make RPM

No.	KW	Make	RPM
3	250	Westinghouse	1200
1	200	Westinghouse	720
2	200	Westinghouse	1200
1	100	Westinghouse	700
1	100	General Electric	900
1	100	Westinghouse	600
1	100	General Electric	1800
1	100	Reliance	550
1	100	Delco	1200
2	90	Westinghouse	650
4	75	Westinghouse	720
1	75	Westinghouse	1200
1	60	Westinghouse	1200
NEW	50	General Electric	1800
3	40	Westinghouse	900
2	30	Westinghouse	720

125 V. DC M.G. Sets

1—100 kw. G.E. 125 v. 900 rpm. 220/440 v.

3 ph. 60 v. AC Syn.

1—125 kw. G.E. 125 v. 1200 rpm. 220/440 v.

3 ph. 60 v. AC.

1—75 kw. West. 125 v. 1200 rpm. 220/440 v.

3 ph. 60 cy.

D.C. Generators—250 v. D.C.

No. KW Make Speed

1	250	West.	1200
1	175	G.E.	700
1	125	G.E.	1150
1	125	West.	560
1	125	Allis-Chal.	1150
1	110	West.	700
1	100	Allis-Chal.	1150
1	75	West.	750

A.C. Generators—220/400/440 220 v.

No. KW Make Speed

1	225	West.	257
1	450	Elec. Machy.	120

Pumps With A.C. or D.C. Motors

No. Qpa. Gpm. Head Kind Make

3	1200	300	Cent.	Worthington
3	1100	323	Cent.	Worthington
3	1000	336	Cent.	Worthington

D.C. Motors—230 volts

No. H.P. Make RPM Type

1	175	G.E.	550
1	175	G.E.	MD

SAVE OVER 50% ON NEW BLOWERS AND VENTILATING FANS

AXIAL FLOW VENT. FANS

1—4000 cfm 6x3" stat. pres. Sturtevant

with 4/1.2 hp. 1750/1150 rpm. 220/

3/60 motor.

2—4000 cfm 3" stat. pres. Sturtevant 2

speed AC Motors.

2—5000 cfm 1.8 stat. pres. Sturtevant

220/440 v. 1/2 hp. AC Motors.

J1—6000 cfm Sturtevant Bul. No. 512389,

3" stat. pres. 7 blade dir. con. 5/1.5

hp. 1750/1175 rpm. 220/440 v. AC

West. TEFC Motors.

Strip Mine Blast Hole Drilling

Well prepared overburden in strip mining saves money.

Our trained blast hole drilling and blasting crews will properly drill and shoot most any type of overburden, in the quickest possible time, to give you more production at lower cost.

We operate in eastern Ohio, western Pennsylvania and northern West Virginia

APEX POWDER CORPORATION
Distributors of Atlas Explosives
1545 Waynesburg Rd. S.E. 5,1421 Canton, O.

LEETONIA COST CUTTERS



Leetonia Hand Drills and Tools for use in and around mines are of proper shape and quality to enable either men paid by the day or on a tonnage basis to do more and better work with less effort.

Our 44-page mine tool catalog free upon request to mine operators, wholesalers and retailers.

We seek your Patronage. We suggest when you make your next purchase, you request your source of supply to furnish Leetonia Drills and Tools.

THE LEETONIA TOOL CO., LEETONIA, OHIO



2—6000 cfm Sturtevant 1.65" stat. pres.

220/440 v. AC Motors.

1—7500 cfm Clarge 7½ hp. 220/440 v.

2 speed motor.

2—12000 cfm 3" stat. pres. Sturtevant with dir. con. 10/3 HP. 1775/1180 rpm. 220/440 v. TEFC Motors.

HOISTS & WINCHES

200—1½ ton Hand Crank rate 27:1 thru an enclosed double reduction gear unit with 4 planetary gears mounted on steel plate complete with 48' of ½" cable, ratchet type brake, push button release.

CAR PULLERS

100—Brand New with 1½" cable, 1½ and 2 ton A.C. or D.C. Motors.

COMPRESSORS

1—315 CFM Ingersoll Rand Portable, 100 lbs. pres. driven by 105 HP Waukesha Oil Engines, 860 rpm.

BARGAIN — FOR SALE

100 KW. Diesel Engine Generator Sets

11—100 KW., 250/275 v. D.C. Delco

Generators dir. con. to 150 H.P.

Model GBD-8, 5½ x 7, 8 cyl. Superior Diesel Engines, electric starting with muffler, power panel and accessories.

Practically as good as new—

Only Used for spares.

DUQUESNE ELECTRIC & MANUFACTURING CO. - PHONE MONTROSE 1-5800

- PITTSBURGH, PA.

STRIP MINING CONTRACTORS

*Know That Arrow
Service Means—*

REAL SERVICE

SALES . . . PARTS . . . SERVICE . . . RENTALS

PARIS - Horizontal & Vertical Drills

THOR - Electric Tools

LE ROI - Compressors & Engines

CARVER - Centrifugal Pumps

QUICKWAY - Truck Shovels, Cranes, Backhoes

ONAN - Light Plants

WARCO - Graders

CLEVELAND-LE ROI - Air Tools

BRIGGS & STRATTON - Engines

Visit Our New Location

ARROW SUPPLY CO.

3600-3616 LIBERTY AVE.
PITTSBURGH 1, PA.

Phone MUseum 1-1555-6-7

RELAYING RAIL

Immediate Shipment

500 Tons 25 lb. ASCE

300 Tons 30 lb. ASCE

500 Tons 40 lb. ASCE

Standard Drillings and Lengths
Can be saw cut to special lengths
if desired.

MIDWEST STEEL

CORPORATION

Charleston, W. Va.

Knoxville, Tenn. Portsmouth, Va.

RAILS
NEW AND
RELAYING
Track Accessories
from 5
warehouses
L. B. FOSTER CO.
NEW YORK — PITTSBURGH
CHICAGO — HOUSTON
Address the Foster Office Nearest You

NEW AND REBUILT STORAGE BATTERY LOCOMOTIVES

Any Size Any Track Gauge

GREENSBURG MACHINE CO.,
Greensburg Pennsylvania

RELAYING RAILS

2,000 tons of 60 lb. first class Relaying
Rails at greatly reduced prices
delivered your destination

M. K. FRANK

Park Building Pittsburgh, Pa.
New York Office, 430 Lexington Ave.
6 Biltz. Bldg. Reno, Nev.

Dragline Buckets

MANGANESES

Chain

Teeth

Rounds & Flats

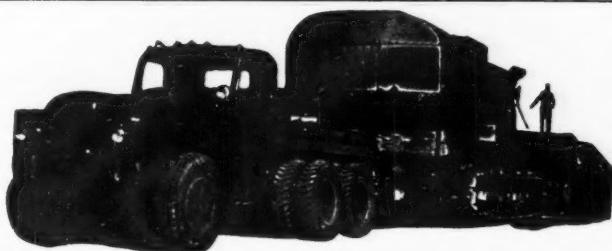
STERLING Water Pumps

George L. Wilson & Co.

Office & Warehouse

310 MENDOTA ST. & P.R.R.
PITTSBURGH 12, PA.

Phone CEdar 1-7710



JOHN BENKART & SONS CO.
Heavy Haulers and Riggers

INTERSTATE AUTHORITY: Pennsylvania, Ohio, West Virginia,
Maryland, Delaware, New York, New Jersey, Michigan.

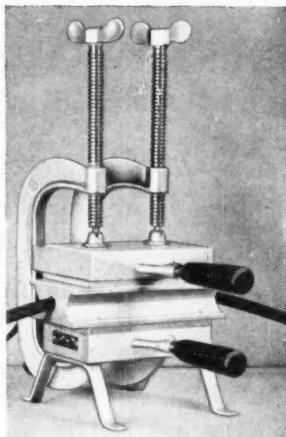
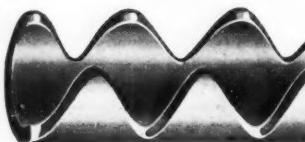
INTRASTATE AUTHORITY: Pennsylvania.

Dependable Service

2500 Charles Street, Pittsburgh (14) Pa. Phone Fairfax 1-8200

Keep GIANTS Earning PROFITS

Quick little American Mine door life savers keep the pulse of power flowing into giant machines.



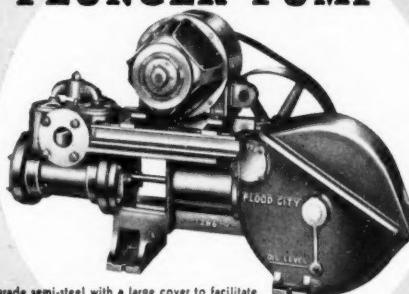
... A severed cable stops the big profit makers. Quick, reliable splicing starts and keeps them going, for profitable operating. Save time, save cable, with a splice as strong as the original cable; smooth vulcanizing, perfect winding, non-kinking, long-wearing. Write for "Show-how" bulletin, describing the leading cable splicing and vulcanizing items of the industry.

Please address, with street
and zone numbers

American Mine Door Co.

2059 Dueber Avenue
Canton 6, Ohio

CONTROL Your Water Problems with the *Flood City* PLUNGER PUMP



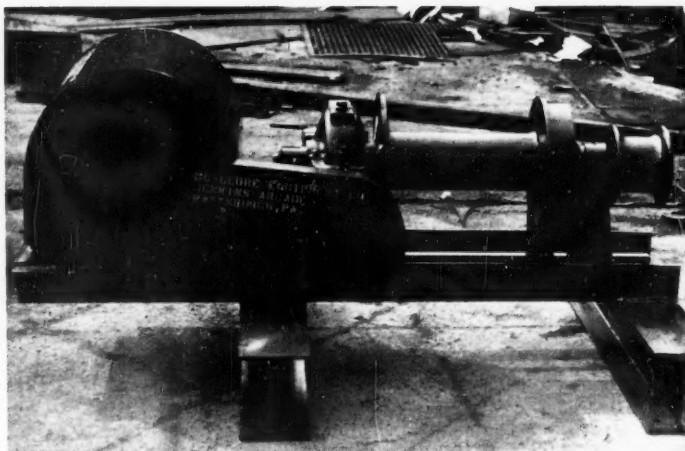
Power end is made of hi-grade semi-steel with a large cover to facilitate inspection. All moving parts are completely self-lubricating. Intermediate shaft runs on adjustable roller bearings. Furnished V-Belt or Gear Drive. Size 5 x 5; Capacity, 50 gals. per minute, 2" suction and 2" discharge.

This pump uses the leak-proof, acid-resistant FLOOD CITY REVERSIBLE WATER END—standard for replacement purposes in large and small coal mines. Write for more information on this and other Flood City Mining Equipment.

Flood City Brass & Electric Co.

Messenger and Elder Streets . JOHNSTOWN, PA.

Branch Office: 4 Virginia St. W., Charleston, W. Va.



Remote Control

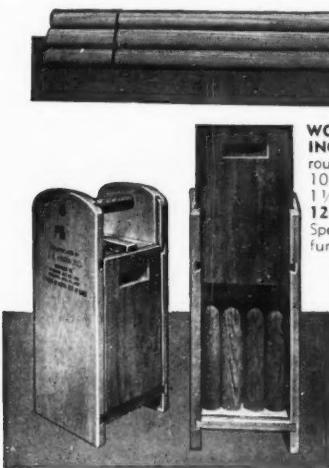
CAR MOVER

For Your Flat Track. Low Cost.

McCLURE EQUIPMENT CO.

3045 Jenkins Arcade Phone: COURT 1-5225

Pittsburgh 22, Pa.



WOOD TAMPING POLES FOR TAMPING EXPLOSIVE SHOTS: Poles are round made of hardwoods, lengths to 10 ft. Price per linear ft. 1" dia. 6c., 1½" dia. 9c., 1¼" dia. 10c., 1¾" dia. 12c., 1½" dia. 14c., 1¾" dia. 20c. Special diameters and lengths can be furnished.

EXPLOSIVE BOXES: Made entirely of wood having no metal parts, tongue-grooved and dovetailed construction with automatic lock using a rubber band for a spring, treated with paraffin to make moisture resistant. "Approved by the Pennsylvania Department of Mines." Sizes as listed based on 1¼" x 8" sticks

No. 9 Powder Box	\$ 2.05	Each	No. 50 Powder Box	\$ 6.40	Each
No. 12 Powder Box	\$ 2.40	"	No. 72 Powder Box	\$ 7.50	"
No. 16 Powder Box	\$ 2.85	"	No. 90 Powder Box	\$ 8.40	"
No. 20 Powder Box	\$ 3.10	"	No. 6 Cap Box	\$ 1.70	"
No. 25 Powder Box	\$ 4.20	"	Sizes 2½" x 8" x 6" Inside		
No. 36 Powder Box	\$ 5.30	"	No. 8 Cap Box	\$ 1.70	"
			Sizes 2" x 2½" x 8" Inside		

The above boxes are rigid and non-conductive.

HAMMOND'S BLASTING EQUIPMENT

J. V. Hammond Company

Spangler, Pennsylvania

"WE LOOK INTO THE EARTH"



CORE DRILLING

- Coal Property Testing
- Pre-GROUTING Mine Shafts
- Mine Drainage Bore Holes
- Large Diameter Holes for Ventilation & Escapeways

PENNSYLVANIA DRILLING CO.
PITTSBURGH 20, PA.

Let Us
Solve
your
DRILLING
PROBLEMS!

DIAMOND CORE DRILLING

BITUMINOUS COAL LANDS
TESTED . . . SATISFACTORY
CORES GUARANTEED

HOFFMAN BROS. DRILLING CO.
Punxsutawney, Pa. Call 382

ARROW SUPPLY CO.

3600 Liberty Ave.
Pittsburgh 1, Pa.

Distributors

BRIGGS & STRATTON

Engines
&
Parts

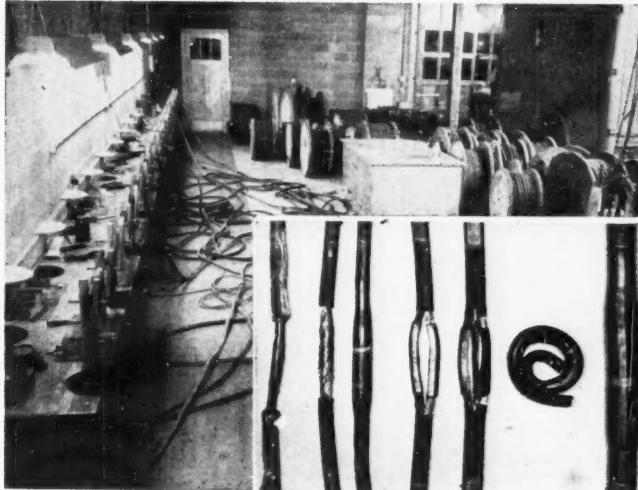
ALL MODELS IN STOCK

Phone:
MUseum 1-1555-6-7

FOR SALE

1—ESCO 1½ cubic yard Coal loading dipper for Marion Model 365 Shovel. Brand New. Priced at \$2000.

JOHN W. PATTERSON COMPANY
Rook Station
Carnegie, Pennsylvania
Phone WALnut 1-4635



Electric cable subjected to severe bending requires a flexible splice. A Davidson vulcanized splice with a fire resistant jacket will outlast two or three ordinary splices.

For quotations write to:

CYRIL DAVIDSON Mine Cable Vulcanizing
Night Phone 3594-W — Day Phone 3219
956 BRUCE STREET
WASHINGTON, PA.

LEPLEY

Patented Mine Equipment

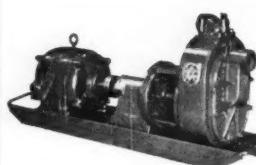
- Automatic Car Stops and Feeders
- Brass and Iron Castings
- Cages—all kinds for all purposes
- Fans—all sizes to meet all conditions
- Hoists Skip and Skip Loading Equipment for all conditions
- Hoists—steam and electric
- Hoist sheaves with hard steel renewable wearing rings
- Pumping machinery
- Lorries for coal and slate
- Slate Dumping Cars

We manufacture a full line of safety and labor saving equipment

**Connellsville Manufacturing and
Mine Supply Company**

Connellsville

Pennsylvania



**MARLOW
SELF-PRIMING
CENTRIFUGAL
GATHERING
PUMPS**

Complete Line Carried in Pittsburgh Stock. Tel. HU 1-4400

HARRIS
PUMP AND SUPPLY COMPANY



"SUPERIOR" COUPLING LINKS

Drop Forged, Electric Welded, Fire Welded
A "Superior" line of Mine Car Couplings of all sizes—
various types — All sizes, 7/8 in. & larger.
Shackles — Cutter Bits — Bit Steel

PITTSBURGH KNIFE & FORGE CO.
1421 Reedsdale St., Pittsburgh (12), Pa.

FOR LASTING PROTECTION OF TIPPLES

FOR SPIC-AND-SPAN COMPANY TOWNS



**Free Book
gives
"INSIDE FACTS"**

on how aluminum paints are formulated—how to choose and use them.

Alcoa does not make paint, but we want you to have the information contained in this booklet. Tells how you can purchase a ready-mixed aluminum paint that will give unequalled protection of steelwork—another type that gives best results on weather-exposed wood. Learn why you may not get best results from just "any" aluminum paint! For your copy, or for specific advice on your paint problems, address PAINT SERVICE BUREAU, ALUMINUM COMPANY OF AMERICA, 834-K Gulf Bldg., Pittsburgh 19, Pa.



Buy aluminum paint from suppliers who display the Alcoa shield on the brand they sell. It is a symbol of quality, indicating that their aluminum paints are made with

ALCOA ALUMINUM PIGMENT



ALL SIZES
of
**CONVEYOR BELT
CARRIED IN STOCK!**

in Pittsburgh.

HYDRAULIC HOSE
Suction & Discharge
Hose.

IMMEDIATE DELIVERY!

**BOSTON WOVEN HOSE
& RUBBER CO.**

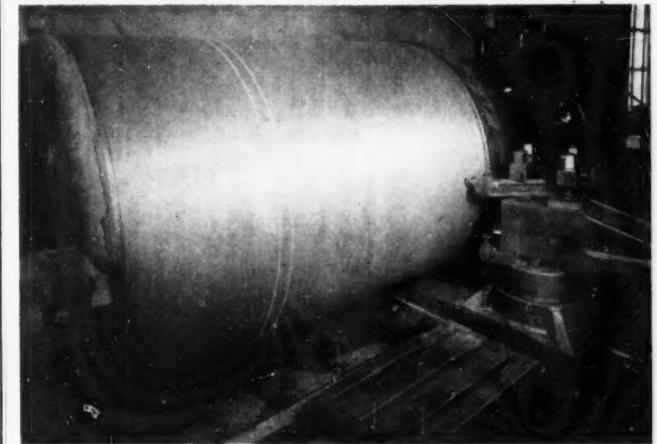
125 Water St. Pittsburgh, Pa.
Phone ATLantic 1-8313

DAVEY COMPRESSORS



ONLY COMPRESSOR
WITH PERMANENT
PEAK
EFFICIENCY
LIFETIME
VALVES

DAVEY COMPRESSOR CO.
KENT, OHIO



Metallized Hydraulic Plunger in our shop.

REPAIR SERVICE FOR COAL MINES By Factory Trained Personnel

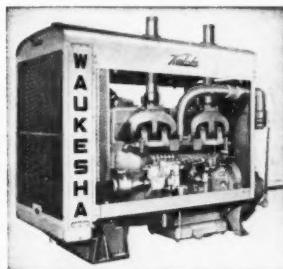
- ARMATURES AND MOTORS Rewound and Repaired
- GENERAL MACHINE WORK Including Re-Babbing Bearings
- METALLIZING

24 Hour Service

Pick Up and Delivery Service

INDUSTRIAL ELECTRIC COMPANY
48 Woodland Ave. Phone 3159 Washington, Pa.

WAUKESHA COMPLETE ENGINES AND SERVICE PARTS



For Your Replacement Needs

- Autolite Batteries
- Black & Decker Electric Tools
- Champion Spark Plugs
- Fafnir Ball Bearings
- Kohler Light Plants
- Prestone Anti-Freeze
- Raybestos Friction Materials
- S & M Shovel-lites
- Timken Roller Bearings

Machine Shop Service — Complete Engine Rebuilding

MOTIVE PARTS CO. OF PA.

6399 PENN AVE., PITTSBURGH (6), PA.
HILAND 1-1000

ELRECO Complete line of Trolley Hangers, Clamps, etc.,
Including Feeder Line Suspensions.

New Elreco Fused Trolley Taps.
ELRECO Roof Suspension Bolt Assemblies
COPPER Cable of All Kinds
Gibraltar Rail Binders, Punches, etc.

Ask For Information

Everything for the coal mine

MARTIN SUPPLY CO.

4030 Liberty Ave.
Pittsburgh 24, Pa.

Phone SCHenley 1-3222

Prices Cut!
ON
STAR
Plus

Aluminum
Alloy Mine
Roof Jacks

**4 Major
Improvements**

Increased volume plus production economies have enabled us to improve our jacks and lower our price. Get the facts.

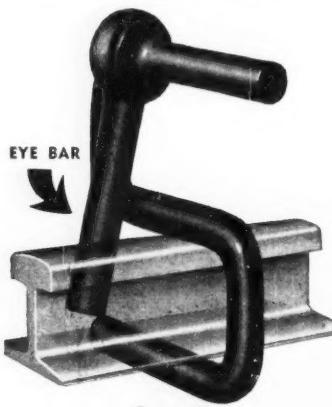
WRITE

Star Jack Co.
ELMWOOD PARK
CHICAGO 35, ILL.

Distributors in all fields.

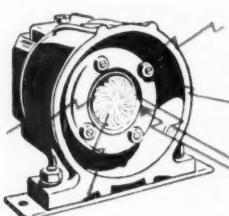


• **SAFE and DURABLE** •
REDIPT
"S" CAR HOLD



(Patented)

DUQUESNE MINE SUPPLY CO.
PITTSBURGH, PA.



**Talking Bigger
Mine Profits!**

The talking you do over Femco Trolleyphone means bigger mine profits. Trolleyphone two-way communication gives you instant contact—and control—of every moving car and every operation in the mine. Exercises your supervision at the point where profits are made.

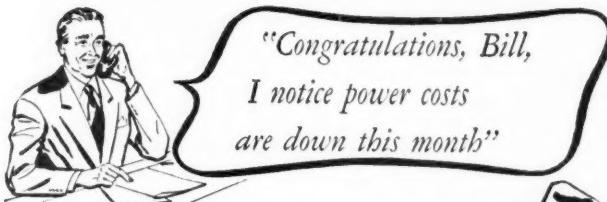
Supervise your mine by Trolleyphone to:

- Produce more coal
- at less cost
- with greater safety
- for larger profits!



**FARMERS ENGINEERING
AND MANUFACTURING COMPANY**
349 BRUSHTON AVE. • PITTSBURGH 21, PA.
Specialists in Electronic Communications Underground

Femco
TROLLEYPHONE
"It Speaks For Itself"



"Thanks, Ed, but give the credit to

MESCOWELD RAIL BONDS™



MB-F
All-Purpose Bond

Mescoweld Rail Bonds are Flashwelded by a patented process which securely attaches bond to cable with a more oxygen-free weld. This assures maximum conductivity and long life and reduces costly power "leaks." Mescoweld Rail Bonds give you more for your power dollar. **18 types are available for immediate delivery.**

Write for details.

MOSEBACH ELECTRIC & SUPPLY COMPANY

1115 ARLINGTON AVE. PITTSBURGH 3, PA.

Phone: HEmlock 8332

Stole the Show at CLEVELAND

Honest—to see the crowds around the Elreco display at the American Mining Congress Exhibit in Cleveland—you'd have thought we were handing out answers to the country's top "jackpot" shows!

But—if you looked closely—you'd have seen the excitement was all centered around Elreco's new Fused Trolley Taps. But that's not surprising, because—

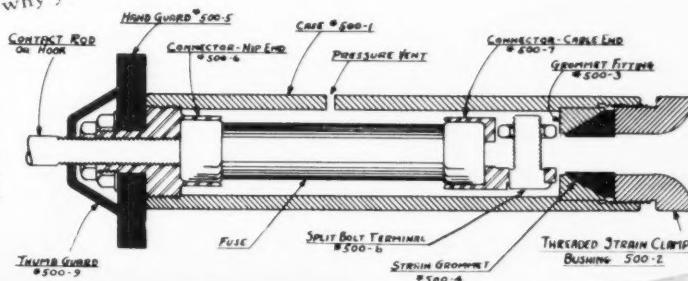
These ANSWERS PAY OFF PLENTY—TOO!

Yes, the new Elreco Fused Trolley Taps offer valuable answers all right... answers with a big pay-off for any mine operator!

They answer the problems of: "strain"...eliminating "breakage" time losses... preventing excessively sharp bends in cable... safety in handling trolley taps... protecting the jam nuts from any arc that would weld them in position... how to make a simple connection to achieve a sound electrical union... plus Tellurium copper contacts, to increase conductivity 200% over brass.

Elreco's new Fused Trolley Taps once again demonstrate this company's leadership. For this great contribution to the Mining Field is another in Elreco's long line of "firsts" ...another reason why you should always see Elreco first!

For complete information on these sensational new Elreco Fused Trolley Taps—check with your DISTRIBUTOR or write direct for catalog sheet.



The ELRECO corporation



CINCINNATI 25, OHIO

2900 Cormany Avenue,
Cincinnati 25, Ohio

Manufacturers of Overhead Trolley
Line Material & Mine Accessories

Since 1892

IT'S IN THE Bag

SEAL - TITE SAFETY SEAM TAMPING BAGS



● What's in a tamping bag is what counts.

That's why SEAL-TITE Tamping Bags are your answer—they are built for your service so that you get a safer, faster, cheaper method of sealing shots.

Safety is built in because of the SEAL-TITE Safety Seam feature which prevents these bags from splitting or breaking as a result of moisture. You use less explosive thus avoiding shattering, heavy blasts which endanger mine roof and working structures.

There's economy in this bag too—it's made of 100% genuine sulphate kraft. That means greater strength and durability.

You reduce the number of charges—it means time savings. You increase the effectiveness of every charge.



Why not investigate today? Write to us and get all the details. Once you use SEAL-TITE Safety Seam Tamping Bags you'll see why so many operators prefer them and depend on them for best results. They can be supplied in any width—any desired length or weight of paper.



Ask about the "Dummy Maker" machine for use with SEAL-TITE Tamping Bags.

Relieves worry . . . assures better, safer working conditions . . . convenient . . . dependable . . . inexpensive . . . furnishes an ever-ready supply of safe, properly filled Dummies . . . fills and packs 400 to 600 bags per hour . . . uses clay, rock dust, or sand . . . requires only one or two skilled operators . . . operates on $\frac{1}{4}$ h.p. motor from trolley circuit . . . mounted on trucks for portability . . . pays for itself in a short time.

THE TAMPING BAG COMPANY Mount Vernon ILLINOIS